DATA VALIDATION REPORT

Gold King Mine Long Term Monitoring

SAMPLE DELIVERY GROUP: 680-130495-1

Prepared by

MEC^X
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I. INTRODUCTION

Task Order Title:	Gold King Mine Long Term Monitoring
Project No.:	20408.012.001.0397.00
Sample Delivery Group:	680-130495-1
EPA Project Manager:	Steve Merritt
Weston Project Manager:	Mark Blanchard
TDD No.:	0001/1510-02
Matrix:	Water/Sediment
QC Level:	Stage 2A
No. of Samples:	16
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica - Savannah

Table 1. Sample Identification

Location ID	*Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
A73_100316	680-130495-1	Water	10/3/16 12:15 PM	200.7, 200.8, 245.1, 2320B, 2340B, 2540 D, 5310 B
A73_SED_100316	680-130495-2	Sediment	10/3/16 12:15 PM	6010C, 6020A, 7471A
A75D_100316	680-130495-3	Water	10/3/16 9:00 AM	200.7, 200.8, 245.1, 2320B, 2340B, 2540 D, 5310 B
A75D_100316D	680-130495-4	Water	10/3/16 9:00 AM	200.7, 200.8, 245.1, 2320B, 2340B, 2540 D, 5310 B
A75D_SED_100316	680-130495-5	Sediment	10/3/16 9:00 AM	6010C, 6020A, 7471A
A75D_SED_100316D	680-130495-6	Sediment	10/3/16 9:00 AM	6010C, 6020A, 7471A
AR19-3_100416	680-130495-7	Water	10/4/16 8:10 AM	200.7, 200.8, 245.1, 2320B, 2340B, 2540 D, 5310 B
AR19-3_SED_100416	680-130495-8	Sediment	10/4/16 8:10 AM	6010C, 6020A, 7471A
AR2-7a_100416	680-130495-9	Water	10/4/16 12:10 PM	200.7, 200.8, 245.1, 2320B, 2340B, 2540 D, 5310 B
AR2-7a_SED_100416	680-130495-10	Sediment	10/4/16 12:10 PM	6010C, 6020A, 7471A
AR7-2_100416	680-130495-11	Water	10/4/16 10:35 AM	200.7, 200.8, 245.1, 2320B, 2340B, 2540 D, 5310 B
AR7-2_100416D	680-130495-12	Water	10/4/16 10:35 AM	200.7, 200.8, 245.1, 2320B, 2340B, 2540 D, 5310 B
AR7-2_SED_100416	680-130495-13	Sediment	10/4/16 10:35 AM	6010C, 6020A, 7471A
AR7-2_SED_100416D	680-130495-14	Sediment	10/4/16 10:35 AM	6010C, 6020A, 7471A
FW-012_100216	680-130495-15	Water	10/2/16 3:00 PM	200.7, 200.8, 245.1, 2320B, 2340B, 2540 D, 5310 B
FW-012_SED_100216	680-130495-16	Sediment	10/2/16 3:00 PM	6010C, 6020A, 7471A

II. Sample Management

Anomalies regarding sample management are noted below. The samples were received within the temperature limits of >0°C to <6°C. The samples were received intact, on ice and properly preserved. Custody seals on shipping and sample containers were intact. The chains-of-custody (COCs) were appropriately signed and dated by field and laboratory personnel except as noted below.

The following issue was noted:

- The organization was not identified on the COC for sample relinquishment or laboratory sample receipt.
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Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
UB	The analyte was detected in the sample and in either the associated laboratory blank or field blank. If detected below the reporting limit (RL) the analyte result was reported as non-detected at the RL due to blank contamination. If detected above the RL, the analyte result was reported as non-detected at the reported result due to blank contamination.	The analyte was detected in the sample and in either the associated laboratory blank or field blank. If detected below the reporting limit (RL) the analyte result was reported as non-detected at the RL due to blank contamination. If detected above the RL, the analyte result was reported as non-detected at the reported result due to blank contamination.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+	Not applicable	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential positive bias.
J-	Not applicable	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential negative bias.

Qualifier	Organics	Inorganics
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
UJB	The analyte was detected in the sample and in either the associated laboratory blank or field blank; the analyte result was reported as non-detected at either the RL or the reported result. The reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The analyte was detected in the sample and in either the associated laboratory blank or field blank; the analyte result was reported as non-detected at either the RL or the reported result. The reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995 or calibration was noncompliant.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
L1	LCS/LCSD RPD was outside control limits.	LCS/LCSD RPD was outside control limits.
Q	MS/MSD recovery was poor.	MS recovery was poor.
Q1	MS/MSD RPD was outside control limits.	MS/MSD RPD was outside control limits.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	ICPMS tune was not compliant.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
F1	Field duplicate results were outside the control limit.	Field duplicate results were outside the control limit.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.

Qualifier	Organics	Inorganics
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. Contract Laboratory Program Statement of Work for Inorganic Superfund Methods 200.7, 200.8, 245.1, 6010C, 6020A, 7471A—Metals and Mercury

Reviewed By: Marcia Hilchey
Date Reviewed: October 31, 2016

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *Quality Assurance Project Plan for U.S. EPA Region 8 CERCLA Site Assessment; Sampling and Analysis Plan/Quality Assurance Project Plan for Gold King Mine Release, Silverton, San Juan County, Colorado* (2015); *United States Environmental Protection Agency Contract Laboratory Program Statement of Work for Inorganic Superfund Methods; EPA Methods 200.7, 200.8, 245.1, 6010C, 6020A, and 7471A;* and the *National Functional Guidelines for Inorganic Superfund Data Review* (2014).

- Holding Times: The analytical holding times, 28 days for mercury and six months for the remaining metals, were met.

- Analytical Method Blanks: No target analytes were reported in the method blanks of sufficient concentration to qualify site sample results with the following exception. Zinc (11.2 µg/L) was detected in the method blank for method 200.8. Associated detected sample results for total and dissolved zinc below the reporting limit (RL) were qualified as nondetected (UB). Associated sample detects for total and dissolved zinc >RL and <5x the MB concentration were qualified as estimated with a potential high bias (J+).

- Laboratory Control Samples (LCS): The LCS recoveries were within the laboratory control limits of 75-125% for methods 6010C and 6020A, 85-115% for methods 200.7, 200.8 and 245.1, and 80-120% for method 7471A.

- Laboratory Duplicates: Laboratory duplicate analyses were not performed on a sample from this SDG. Method precision was evaluated based on matrix spike/matrix spike duplicate results.

- Matrix Spike/Matrix Spike Duplicate (MS/MSD): MS/MSD analyses were performed on samples AR7-2_100416D (dissolved) and FW-012_100216 (dissolved) for methods 200.7 and 200.8; on samples A73_100316 (total) and A75D_100316 (dissolved) for method 245.1; and on sample A73_SED_100316 for methods 6010C and 6020A. Results were not assessed when the native concentration was more than 4× the spike amount. The recoveries were within the laboratory control limits of 75-125% for methods 200.7, 6010C and 6020A, 80-120% for method 7471, and 70-130% for methods 200.8 and 245.1 with the following exception. The MS/MSD recoveries for cobalt by method 6020A (168%/178%)

exceeded the laboratory control limits. All associated sediment sample results were qualified as estimated with high potential bias (J+). MS/MSD RPDs were ≤20% for all target analytes. MS/MSD analyses were not performed for method 7471A.

- Post Digestion Spike (PDS): There were no PDS analyses reported in this SDG.

- Serial Dilution: Serial dilution analyses were not reported in this SDG.

- Field QC Samples: MEC^X evaluated field quality control (QC) samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^X used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below:

    - Field Blanks and Equipment Rinsates: Field blank or equipment blank samples were not identified for this SDG.

    - Field Duplicates: Samples A75D_100316 and A75D_100316D, A75D_SED_100316 and A75D_SED_100316D, AR7-2_100416 and AR7-2_100416D, and AR7-2_SED_100416 and AR7-2_SED_100416D were identified as field duplicate pairs for this SDG. With exceptions noted in the table below, RPDs were within the control limits of ≤30% for surface water samples and ≤50% for sediment samples for all target analytes greater than the RL, and within the reasonable control limit of ±RL for all results <RL. Detected results for affected samples were qualified as estimated (J).

Analyte	RPD or ±RL	Affected samples
dissolved aluminum	84%	A75D_100316, A75D_100316D
dissolved copper	96%	
dissolved iron	40%	
dissolved zinc	36%	
dissolved lead	62%	
dissolved cadmium	36%	AR7-2_100416, AR7-2_100416D
dissolved lead	33%	
total chromium	75%	A75D_SED_100316, A75D_SED_100316D

B. Methods SM2340B, SM2320B, SM2540D, SM5310B—Total Hardness by calculation, Total Alkalinity, Total Suspended Solids (TSS), Dissolved Organic Carbon (DOC), Total Organic Carbon (TOC)

Reviewed By: M. Hilchey
Date Reviewed: October 31, 2016

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *Quality Assurance Project Plan for U.S. EPA Region 8 CERCLA Site Assessment; Sampling and Analysis Plan/Quality Assurance Project Plan for Gold King Mine Release, Silverton, San Juan County, Colorado* (2015); *United States Environmental Protection Agency Contract Laboratory Program Statement of Work for Inorganic Superfund Methods; Standard Methods for the Examination of Water and Wastewater* 2340B, 2320B, 2540D and 5310B; and the *National Functional Guidelines for Superfund Inorganic Data Review* (2014).

- Holding Times: The analytical holding times, as listed below, were met.
    - Total Hardness (SM2340B) – 180 days
    - Total Alkalinity (SM2320B) – 14 days
    - Total Suspended Solids (SM2540D) – 7 days
    - Total Organic Carbon (SM5310B)– 28 days
    - Dissolved Organic Carbon (SM5310B) – 28 days

- Analytical Method Blanks: There were no detects in the method blanks.

- Laboratory Control Samples: LCS/LCSD recoveries were within the laboratory control limits of 80-120% for all methods, and RPDs were within the laboratory control limits of ≤30% for alkalinity, ≤20% for DOC, and ≤25% for TSS and TOC.

- Laboratory Duplicates: Laboratory duplicate analysis was performed on sample AR19-3_100416 for TSS. The RPD met the QAPP control limit of ≤20%. Laboratory duplicate analyses were not performed for the remaining methods.

- Matrix Spike/Matrix Spike Duplicate (MS/MSD): MS/MSD analyses were performed on sample AR19-3_100416 for TOC and on sample A73_100316 for DOC. All laboratory recovery and RPD acceptance criteria were met. MS/MSD analyses were not performed for the remaining methods.

- Field QC Samples: MEC^X evaluated field quality control (QC) samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^X used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below:

- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

- Field Duplicates: Samples A75D_100316 and A75D_100316D, and AR7-2_100416 and AR7-2_100416D were identified as field duplicate pairs for this SDG. RPDs were within the control limit of ≤30% for all target analytes >RL, and within the reasonable control limit of ±RL for all results <RL, except as noted in the table below. Results for affected samples were qualified as estimated (J). The field duplicate pairs were considered to be in acceptable agreement.

Analyte	RPD or ±RL	Affected samples
TSS	79%	A75D_100316, A75D_100316D
DOC	35%	AR7-2_100416, AR7-2_100416D

Validated Sample Result Forms: 680-130495-1

Analysis Method 200.7 Rev 4.4

Sample Name A73_100316 **Matrix Type:** Water

Lab Sample Name: 680-130495-1 **Sample Date:** 10/3/2016 12:15:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	1300	200	24	ug/L			
Aluminum, Dissolved	D	7429-90-5	160	200	24	ug/L	J	J	
Calcium	T	7440-70-2	57000	500	25	ug/L			
Calcium, Dissolved	D	7440-70-2	57000	500	25	ug/L			
Iron	T	7439-89-6	1800	50	17	ug/L			
Iron, Dissolved	D	7439-89-6	280	50	17	ug/L			
Magnesium	T	7439-95-4	4300	500	33	ug/L			
Magnesium, Dissolved	D	7439-95-4	4300	500	33	ug/L			
Potassium	T	7440-09-7	760	1000	17	ug/L	J	J	
Potassium, Dissolved	D	7440-09-7	780	1000	17	ug/L	J	J	
Sodium	T	7440-23-5	2300	1000	480	ug/L			
Sodium, Dissolved	D	7440-23-5	2300	1000	480	ug/L			

Sample Name AR7-2_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-11 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	280	200	24	ug/L			
Aluminum, Dissolved	D	7429-90-5	28	200	24	ug/L	J	J	
Calcium	T	7440-70-2	65000	500	25	ug/L			
Calcium, Dissolved	D	7440-70-2	60000	500	25	ug/L			
Iron	T	7439-89-6	400	50	17	ug/L			
Iron, Dissolved	D	7439-89-6	17	50	17	ug/L	U	U	
Magnesium	T	7439-95-4	9100	500	33	ug/L			
Magnesium, Dissolved	D	7439-95-4	8500	500	33	ug/L			
Potassium	T	7440-09-7	2700	1000	17	ug/L			
Potassium, Dissolved	D	7440-09-7	2500	1000	17	ug/L			
Sodium	T	7440-23-5	14000	1000	480	ug/L			
Sodium, Dissolved	D	7440-23-5	13000	1000	480	ug/L			

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Sample Name AR7-2_100416D **Matrix Type:** Water

Lab Sample Name: 680-130495-12 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	270	200	24	ug/L			
Aluminum, Dissolved	D	7429-90-5	34	200	24	ug/L	J	J	
Calcium	T	7440-70-2	63000	500	25	ug/L			
Calcium, Dissolved	D	7440-70-2	64000	500	25	ug/L			
Iron	T	7439-89-6	360	50	17	ug/L			
Iron, Dissolved	D	7439-89-6	17	50	17	ug/L	U	U	
Magnesium	T	7439-95-4	9000	500	33	ug/L			
Magnesium, Dissolved	D	7439-95-4	9000	500	33	ug/L			
Potassium	T	7440-09-7	2700	1000	17	ug/L			
Potassium, Dissolved	D	7440-09-7	2700	1000	17	ug/L			
Sodium	T	7440-23-5	14000	1000	480	ug/L			
Sodium, Dissolved	D	7440-23-5	14000	1000	480	ug/L			

Sample Name FW-012_100216 **Matrix Type:** Water

Lab Sample Name: 680-130495-15 **Sample Date:** 10/2/2016 3:00:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	330	200	24	ug/L			
Aluminum, Dissolved	D	7429-90-5	32	200	24	ug/L	J	J	
Calcium	T	7440-70-2	86000	500	25	ug/L			
Calcium, Dissolved	D	7440-70-2	83000	500	25	ug/L			
Iron	T	7439-89-6	350	50	17	ug/L			
Iron, Dissolved	D	7439-89-6	20	50	17	ug/L	J	J	
Magnesium	T	7439-95-4	13000	500	33	ug/L			
Magnesium, Dissolved	D	7439-95-4	12000	500	33	ug/L			
Potassium	T	7440-09-7	2800	1000	17	ug/L			
Potassium, Dissolved	D	7440-09-7	2700	1000	17	ug/L			
Sodium	T	7440-23-5	30000	1000	480	ug/L			
Sodium, Dissolved	D	7440-23-5	28000	1000	480	ug/L			

Sample Name A75D_100316 **Matrix Type:** Water

Lab Sample Name: 680-130495-3 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	790	200	24	ug/L			

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Aluminum, Dissolved	D	7429-90-5	160	200	24	ug/L	J	J	F1
Calcium	T	7440-70-2	41000	500	25	ug/L			
Calcium, Dissolved	D	7440-70-2	40000	500	25	ug/L			
Iron	T	7439-89-6	850	50	17	ug/L			
Iron, Dissolved	D	7439-89-6	140	50	17	ug/L		J	F1
Magnesium	T	7439-95-4	3600	500	33	ug/L			
Magnesium, Dissolved	D	7439-95-4	3500	500	33	ug/L			
Potassium	T	7440-09-7	790	1000	17	ug/L	J	J	
Potassium, Dissolved	D	7440-09-7	760	1000	17	ug/L	J	J	
Sodium	T	7440-23-5	1700	1000	480	ug/L			
Sodium, Dissolved	D	7440-23-5	1600	1000	480	ug/L			

Sample Name A75D_100316D **Matrix Type:** Water

Lab Sample Name: 680-130495-4 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	750	200	24	ug/L			
Aluminum, Dissolved	D	7429-90-5	390	200	24	ug/L		J	F1
Calcium	T	7440-70-2	40000	500	25	ug/L			
Calcium, Dissolved	D	7440-70-2	41000	500	25	ug/L			
Iron	T	7439-89-6	800	50	17	ug/L			
Iron, Dissolved	D	7439-89-6	210	50	17	ug/L		J	F1
Magnesium	T	7439-95-4	3500	500	33	ug/L			
Magnesium, Dissolved	D	7439-95-4	3600	500	33	ug/L			
Potassium	T	7440-09-7	760	1000	17	ug/L	J	J	
Potassium, Dissolved	D	7440-09-7	790	1000	17	ug/L	J	J	
Sodium	T	7440-23-5	1700	1000	480	ug/L			
Sodium, Dissolved	D	7440-23-5	1700	1000	480	ug/L			

Sample Name AR19-3_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-7 **Sample Date:** 10/4/2016 8:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	230	200	24	ug/L			
Aluminum, Dissolved	D	7429-90-5	24	200	24	ug/L	U	U	
Calcium	T	7440-70-2	63000	500	25	ug/L			
Calcium, Dissolved	D	7440-70-2	61000	500	25	ug/L			
Iron	T	7439-89-6	360	50	17	ug/L			
Iron, Dissolved	D	7439-89-6	17	50	17	ug/L	U	U	
Magnesium	T	7439-95-4	8700	500	33	ug/L			

Analysis Method 200.7 Rev 4.4

Magnesium, Dissolved	D	7439-95-4	8500	500	33	ug/L			
Potassium	T	7440-09-7	2600	1000	17	ug/L			
Potassium, Dissolved	D	7440-09-7	2500	1000	17	ug/L			
Sodium	T	7440-23-5	12000	1000	480	ug/L			
Sodium, Dissolved	D	7440-23-5	12000	1000	480	ug/L			

Sample Name AR2-7a_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-9 **Sample Date:** 10/4/2016 12:10:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	380	200	24	ug/L			
Aluminum, Dissolved	D	7429-90-5	25	200	24	ug/L	J	J	
Calcium	T	7440-70-2	65000	500	25	ug/L			
Calcium, Dissolved	D	7440-70-2	63000	500	25	ug/L			
Iron	T	7439-89-6	500	50	17	ug/L			
Iron, Dissolved	D	7439-89-6	17	50	17	ug/L	U	U	
Magnesium	T	7439-95-4	9400	500	33	ug/L			
Magnesium, Dissolved	D	7439-95-4	9200	500	33	ug/L			
Potassium	T	7440-09-7	2700	1000	17	ug/L			
Potassium, Dissolved	D	7440-09-7	2600	1000	17	ug/L			
Sodium	T	7440-23-5	15000	1000	480	ug/L			
Sodium, Dissolved	D	7440-23-5	15000	1000	480	ug/L			

Analysis Method 200.8

Sample Name A73_100316 **Matrix Type:** Water

Lab Sample Name: 680-130495-1 **Sample Date:** 10/3/2016 12:15:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Antimony, Dissolved	D	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	0.37	1	0.37	ug/L	U	U	
Arsenic, Dissolved	D	7440-38-2	0.37	1	0.37	ug/L	U	U	
Barium	T	7440-39-3	27	2	0.14	ug/L			
Barium, Dissolved	D	7440-39-3	27	2	0.14	ug/L			
Beryllium	T	7440-41-7	0.17	0.4	0.15	ug/L	J	J	
Beryllium, Dissolved	D	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	1.1	0.5	0.043	ug/L			
Cadmium, Dissolved	D	7440-43-9	1.3	0.5	0.043	ug/L			
Chromium	T	7440-47-3	1	2	1	ug/L	U	U	
Chromium, Dissolved	D	7440-47-3	1	2	1	ug/L	U	U	

Analysis Method 200.8

Cobalt	T	7440-48-4	3.7	0.4	0.12	ug/L			
Cobalt, Dissolved	D	7440-48-4	3.7	0.4	0.12	ug/L			
Copper	T	7440-50-8	15	5	0.5	ug/L			
Copper, Dissolved	D	7440-50-8	3.2	5	0.5	ug/L	J	J	
Lead	T	7439-92-1	3.7	0.3	0.06	ug/L	B		
Lead, Dissolved	D	7439-92-1	0.97	0.3	0.06	ug/L	B		
Manganese	T	7439-96-5	810	2.5	1.2	ug/L			
Manganese, Dissolved	D	7439-96-5	830	2.5	1.2	ug/L			
Molybdenum	T	7439-98-7	0.79	1	0.45	ug/L	J	J	
Molybdenum, Dissolved	D	7439-98-7	0.64	1	0.45	ug/L	J	J	
Nickel	T	7440-02-0	4.1	5	0.4	ug/L	J	J	
Nickel, Dissolved	D	7440-02-0	4	5	0.4	ug/L	J	J	
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U	
Selenium, Dissolved	D	7782-49-2	0.58	2	0.58	ug/L	U	U	
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U	
Silver, Dissolved	D	7440-22-4	0.1	1	0.1	ug/L	U	U	
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Thallium, Dissolved	D	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Vanadium	T	7440-62-2	0.3	1	0.3	ug/L	U	U	
Vanadium, Dissolved	D	7440-62-2	0.3	1	0.3	ug/L	U	U	
Zinc	T	7440-66-6	360	20	2.8	ug/L	B		
Zinc, Dissolved	D	7440-66-6	310	20	2.8	ug/L	B		

Sample Name AR7-2_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-11 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Antimony, Dissolved	D	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	0.37	1	0.37	ug/L	U	U	
Arsenic, Dissolved	D	7440-38-2	0.37	1	0.37	ug/L	U	U	
Barium	T	7440-39-3	56	2	0.14	ug/L			
Barium, Dissolved	D	7440-39-3	48	2	0.14	ug/L			
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Beryllium, Dissolved	D	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	1.1	0.5	0.043	ug/L			
Cadmium, Dissolved	D	7440-43-9	1.6	0.5	0.043	ug/L		J	F1
Chromium	T	7440-47-3	1	2	1	ug/L	U	U	
Chromium, Dissolved	D	7440-47-3	1	2	1	ug/L	U	U	
Cobalt	T	7440-48-4	0.46	0.4	0.12	ug/L			
Cobalt, Dissolved	D	7440-48-4	0.38	0.4	0.12	ug/L	J	J	

Analysis Method 200.8

Copper	T	7440-50-8	2.6	5	0.5	ug/L	J	J		
Copper, Dissolved	D	7440-50-8	0.63	5	0.5	ug/L	J	J		
Lead	T	7439-92-1	3.2	0.3	0.06	ug/L	B			
Lead, Dissolved	D	7439-92-1	2	0.3	0.06	ug/L	B	J	F1	
Manganese	T	7439-96-5	90	2.5	1.2	ug/L				
Manganese, Dissolved	D	7439-96-5	14	2.5	1.2	ug/L				
Molybdenum	T	7439-98-7	0.77	1	0.45	ug/L	J	J		
Molybdenum, Dissolved	D	7439-98-7	0.85	1	0.45	ug/L	J	J		
Nickel	T	7440-02-0	2.6	5	0.4	ug/L	J	J		
Nickel, Dissolved	D	7440-02-0	2.1	5	0.4	ug/L	J	J		
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U		
Selenium, Dissolved	D	7782-49-2	0.58	2	0.58	ug/L	U	U		
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U		
Silver, Dissolved	D	7440-22-4	0.1	1	0.1	ug/L	U	U		
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U		
Thallium, Dissolved	D	7440-28-0	0.1	0.2	0.1	ug/L	U	U		
Vanadium	T	7440-62-2	1.4	1	0.3	ug/L				
Vanadium, Dissolved	D	7440-62-2	0.41	1	0.3	ug/L	J	J		
Zinc	T	7440-66-6	93	20	2.8	ug/L	B			
Zinc, Dissolved	D	7440-66-6	13	20	2.8	ug/L	J B	UB	B	

Sample Name AR7-2_100416D **Matrix Type:** Water

Lab Sample Name: 680-130495-12 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Antimony, Dissolved	D	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	0.37	1	0.37	ug/L	U	U	
Arsenic, Dissolved	D	7440-38-2	0.37	1	0.37	ug/L	U	U	
Barium	T	7440-39-3	56	2	0.14	ug/L			
Barium, Dissolved	D	7440-39-3	51	2	0.14	ug/L			
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Beryllium, Dissolved	D	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	0.93	0.5	0.043	ug/L			
Cadmium, Dissolved	D	7440-43-9	2.3	0.5	0.043	ug/L		J	F1
Chromium	T	7440-47-3	1	2	1	ug/L	U	U	
Chromium, Dissolved	D	7440-47-3	1	2	1	ug/L	U	U	
Cobalt	T	7440-48-4	0.41	0.4	0.12	ug/L			
Cobalt, Dissolved	D	7440-48-4	0.2	0.4	0.12	ug/L	J	J	
Copper	T	7440-50-8	3.2	5	0.5	ug/L	J	J	
Copper, Dissolved	D	7440-50-8	0.6	5	0.5	ug/L	J	J	

Analysis Method 200.8

Lead	T	7439-92-1	3.2	0.3	0.06	ug/L	B		
Lead, Dissolved	D	7439-92-1	2.8	0.3	0.06	ug/L	B	J	F1
Manganese	T	7439-96-5	69	2.5	1.2	ug/L			
Manganese, Dissolved	D	7439-96-5	15	2.5	1.2	ug/L			
Molybdenum	T	7439-98-7	0.81	1	0.45	ug/L	J	J	
Molybdenum, Dissolved	D	7439-98-7	0.82	1	0.45	ug/L	J	J	
Nickel	T	7440-02-0	2.4	5	0.4	ug/L	J	J	
Nickel, Dissolved	D	7440-02-0	2.3	5	0.4	ug/L	J	J	
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U	
Selenium, Dissolved	D	7782-49-2	0.58	2	0.58	ug/L	U	U	
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U	
Silver, Dissolved	D	7440-22-4	0.1	1	0.1	ug/L	U	U	
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Thallium, Dissolved	D	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Vanadium	T	7440-62-2	1.4	1	0.3	ug/L			
Vanadium, Dissolved	D	7440-62-2	0.62	1	0.3	ug/L	J	J	
Zinc	T	7440-66-6	84	20	2.8	ug/L	B		
Zinc, Dissolved	D	7440-66-6	15	20	2.8	ug/L	J B	UB	B

Sample Name FW-012_100216 **Matrix Type:** Water

Lab Sample Name: 680-130495-15 **Sample Date:** 10/2/2016 3:00:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum, Dissolved	D	7429-90-5	30	10	4.6	ug/L			
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Antimony, Dissolved	D	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	0.37	1	0.37	ug/L	U	U	
Arsenic, Dissolved	D	7440-38-2	0.37	1	0.37	ug/L	U	U	
Barium	T	7440-39-3	69	2	0.14	ug/L			
Barium, Dissolved	D	7440-39-3	65	2	0.14	ug/L			
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Beryllium, Dissolved	D	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	0.32	0.5	0.043	ug/L	J	J	
Cadmium, Dissolved	D	7440-43-9	6.1	0.5	0.043	ug/L			
Chromium	T	7440-47-3	1	2	1	ug/L	U	U	
Chromium, Dissolved	D	7440-47-3	1	2	1	ug/L	U	U	
Cobalt	T	7440-48-4	0.45	0.4	0.12	ug/L			
Cobalt, Dissolved	D	7440-48-4	0.45	0.4	0.12	ug/L			
Copper	T	7440-50-8	1.6	5	0.5	ug/L	J	J	
Copper, Dissolved	D	7440-50-8	1.1	5	0.5	ug/L	J	J	
Lead	T	7439-92-1	1.9	0.3	0.06	ug/L	B		

Analysis Method 200.8

Lead, Dissolved	D	7439-92-1	7.1	0.3	0.06	ug/L	B		
Manganese	T	7439-96-5	110	2.5	1.2	ug/L			
Manganese, Dissolved	D	7439-96-5	49	2.5	1.2	ug/L			
Molybdenum	T	7439-98-7	0.99	1	0.45	ug/L	J	J	
Molybdenum, Dissolved	D	7439-98-7	1.2	1	0.45	ug/L			
Nickel	T	7440-02-0	2.9	5	0.4	ug/L	J	J	
Nickel, Dissolved	D	7440-02-0	2.9	5	0.4	ug/L	J	J	
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U	
Selenium, Dissolved	D	7782-49-2	0.58	2	0.58	ug/L	U	U	
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U	
Silver, Dissolved	D	7440-22-4	0.1	1	0.1	ug/L	U	U	
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Thallium, Dissolved	D	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Vanadium	T	7440-62-2	0.54	1	0.3	ug/L	J	J	
Vanadium, Dissolved	D	7440-62-2	0.4	1	0.3	ug/L	J	J	
Zinc	T	7440-66-6	16	20	2.8	ug/L	J B	UB	B
Zinc, Dissolved	D	7440-66-6	5.3	20	2.8	ug/L	J B	UB	B

Sample Name A75D_100316 **Matrix Type:** Water

Lab Sample Name: 680-130495-3 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Antimony, Dissolved	D	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	0.38	1	0.37	ug/L	J	J	
Arsenic, Dissolved	D	7440-38-2	0.37	1	0.37	ug/L	U	U	
Barium	T	7440-39-3	26	2	0.14	ug/L			
Barium, Dissolved	D	7440-39-3	25	2	0.14	ug/L			
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Beryllium, Dissolved	D	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	0.6	0.5	0.043	ug/L			
Cadmium, Dissolved	D	7440-43-9	1.1	0.5	0.043	ug/L			
Chromium	T	7440-47-3	1	2	1	ug/L	U	U	
Chromium, Dissolved	D	7440-47-3	1	2	1	ug/L	U	U	
Cobalt	T	7440-48-4	2.2	0.4	0.12	ug/L			
Cobalt, Dissolved	D	7440-48-4	2.1	0.4	0.12	ug/L			
Copper	T	7440-50-8	6.3	5	0.5	ug/L			
Copper, Dissolved	D	7440-50-8	2.1	5	0.5	ug/L	J	J	F1
Lead	T	7439-92-1	2.1	0.3	0.06	ug/L	B		
Lead, Dissolved	D	7439-92-1	0.95	0.3	0.06	ug/L	B	J	F1
Manganese	T	7439-96-5	470	2.5	1.2	ug/L			

Analysis Method 200.8

Manganese, Dissolved	D	7439-96-5	460	2.5	1.2	ug/L			
Molybdenum	T	7439-98-7	0.66	1	0.45	ug/L	J	J	
Molybdenum, Dissolved	D	7439-98-7	0.6	1	0.45	ug/L	J	J	
Nickel	T	7440-02-0	3.2	5	0.4	ug/L	J	J	
Nickel, Dissolved	D	7440-02-0	4	5	0.4	ug/L	J	J	
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U	
Selenium, Dissolved	D	7782-49-2	0.58	2	0.58	ug/L	U	U	
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U	
Silver, Dissolved	D	7440-22-4	0.1	1	0.1	ug/L	U	U	
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Thallium, Dissolved	D	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Vanadium	T	7440-62-2	0.3	1	0.3	ug/L	U	U	
Vanadium, Dissolved	D	7440-62-2	0.3	1	0.3	ug/L	U	U	
Zinc	T	7440-66-6	210	20	2.8	ug/L	B		
Zinc, Dissolved	D	7440-66-6	160	20	2.8	ug/L	B	J	F1

Sample Name A75D_100316D **Matrix Type:** Water

Lab Sample Name: 680-130495-4 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Antimony, Dissolved	D	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	0.37	1	0.37	ug/L	U	U	
Arsenic, Dissolved	D	7440-38-2	0.37	1	0.37	ug/L	U	U	
Barium	T	7440-39-3	27	2	0.14	ug/L			
Barium, Dissolved	D	7440-39-3	25	2	0.14	ug/L			
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Beryllium, Dissolved	D	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	0.66	0.5	0.043	ug/L			
Cadmium, Dissolved	D	7440-43-9	1.2	0.5	0.043	ug/L			
Chromium	T	7440-47-3	1	2	1	ug/L	U	U	
Chromium, Dissolved	D	7440-47-3	1	2	1	ug/L	U	U	
Cobalt	T	7440-48-4	2.3	0.4	0.12	ug/L			
Cobalt, Dissolved	D	7440-48-4	2.2	0.4	0.12	ug/L			
Copper	T	7440-50-8	6.2	5	0.5	ug/L			
Copper, Dissolved	D	7440-50-8	6	5	0.5	ug/L		J	F1
Lead	T	7439-92-1	2	0.3	0.06	ug/L	B		
Lead, Dissolved	D	7439-92-1	1.8	0.3	0.06	ug/L	B	J	F1
Manganese	T	7439-96-5	480	2.5	1.2	ug/L			
Manganese, Dissolved	D	7439-96-5	460	2.5	1.2	ug/L			
Molybdenum	T	7439-98-7	0.67	1	0.45	ug/L	J	J	

Analysis Method 200.8

Molybdenum, Dissolved	D	7439-98-7	0.46	1	0.45	ug/L	J	J	
Nickel	T	7440-02-0	3.4	5	0.4	ug/L	J	J	
Nickel, Dissolved	D	7440-02-0	3.2	5	0.4	ug/L	J	J	
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U	
Selenium, Dissolved	D	7782-49-2	0.58	2	0.58	ug/L	U	U	
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U	
Silver, Dissolved	D	7440-22-4	0.1	1	0.1	ug/L	U	U	
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Thallium, Dissolved	D	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Vanadium	T	7440-62-2	0.3	1	0.3	ug/L	U	U	
Vanadium, Dissolved	D	7440-62-2	0.3	1	0.3	ug/L	U	U	
Zinc	T	7440-66-6	220	20	2.8	ug/L	B		
Zinc, Dissolved	D	7440-66-6	230	20	2.8	ug/L	B	J	F1

Sample Name AR19-3_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-7 **Sample Date:** 10/4/2016 8:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Antimony, Dissolved	D	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	0.37	1	0.37	ug/L	U	U	
Arsenic, Dissolved	D	7440-38-2	0.37	1	0.37	ug/L	U	U	
Barium	T	7440-39-3	50	2	0.14	ug/L			
Barium, Dissolved	D	7440-39-3	45	2	0.14	ug/L			
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Beryllium, Dissolved	D	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	0.89	0.5	0.043	ug/L			
Cadmium, Dissolved	D	7440-43-9	1	0.5	0.043	ug/L			
Chromium	T	7440-47-3	1	2	1	ug/L	U	U	
Chromium, Dissolved	D	7440-47-3	1	2	1	ug/L	U	U	
Cobalt	T	7440-48-4	0.43	0.4	0.12	ug/L			
Cobalt, Dissolved	D	7440-48-4	0.44	0.4	0.12	ug/L			
Copper	T	7440-50-8	2.5	5	0.5	ug/L	J	J	
Copper, Dissolved	D	7440-50-8	0.54	5	0.5	ug/L	J	J	
Lead	T	7439-92-1	2.5	0.3	0.06	ug/L	B		
Lead, Dissolved	D	7439-92-1	1.1	0.3	0.06	ug/L	B		
Manganese	T	7439-96-5	100	2.5	1.2	ug/L			
Manganese, Dissolved	D	7439-96-5	51	2.5	1.2	ug/L			
Molybdenum	T	7439-98-7	0.73	1	0.45	ug/L	J	J	
Molybdenum, Dissolved	D	7439-98-7	0.71	1	0.45	ug/L	J	J	
Nickel	T	7440-02-0	2.6	5	0.4	ug/L	J	J	

Analysis Method 200.8

Nickel, Dissolved	D	7440-02-0	2.3	5	0.4	ug/L	J	J	
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U	
Selenium, Dissolved	D	7782-49-2	0.58	2	0.58	ug/L	U	U	
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U	
Silver, Dissolved	D	7440-22-4	0.1	1	0.1	ug/L	U	U	
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Thallium, Dissolved	D	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Vanadium	T	7440-62-2	0.7	1	0.3	ug/L	J	J	
Vanadium, Dissolved	D	7440-62-2	0.3	1	0.3	ug/L	U	U	
Zinc	T	7440-66-6	100	20	2.8	ug/L	B		
Zinc, Dissolved	D	7440-66-6	40	20	2.8	ug/L	B	J+	B

Sample Name AR2-7a_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-9 **Sample Date:** 10/4/2016 12:10:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Antimony, Dissolved	D	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	0.37	1	0.37	ug/L	U	U	
Arsenic, Dissolved	D	7440-38-2	0.58	1	0.37	ug/L	J	J	
Barium	T	7440-39-3	69	2	0.14	ug/L			
Barium, Dissolved	D	7440-39-3	62	2	0.14	ug/L			
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Beryllium, Dissolved	D	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	1.1	0.5	0.043	ug/L			
Cadmium, Dissolved	D	7440-43-9	1.4	0.5	0.043	ug/L			
Chromium	T	7440-47-3	1	2	1	ug/L	U	U	
Chromium, Dissolved	D	7440-47-3	1	2	1	ug/L	U	U	
Cobalt	T	7440-48-4	0.51	0.4	0.12	ug/L			
Cobalt, Dissolved	D	7440-48-4	0.4	0.4	0.12	ug/L			
Copper	T	7440-50-8	2.8	5	0.5	ug/L	J	J	
Copper, Dissolved	D	7440-50-8	0.67	5	0.5	ug/L	J	J	
Lead	T	7439-92-1	3.7	0.3	0.06	ug/L	B		
Lead, Dissolved	D	7439-92-1	1.5	0.3	0.06	ug/L	B		
Manganese	T	7439-96-5	100	2.5	1.2	ug/L			
Manganese, Dissolved	D	7439-96-5	12	2.5	1.2	ug/L			
Molybdenum	T	7439-98-7	0.83	1	0.45	ug/L	J	J	
Molybdenum, Dissolved	D	7439-98-7	0.93	1	0.45	ug/L	J	J	
Nickel	T	7440-02-0	2.6	5	0.4	ug/L	J	J	
Nickel, Dissolved	D	7440-02-0	2.3	5	0.4	ug/L	J	J	
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U	

Analysis Method 200.8

Selenium, Dissolved	D	7782-49-2	0.58	2	0.58	ug/L	U	U	
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U	
Silver, Dissolved	D	7440-22-4	0.1	1	0.1	ug/L	U	U	
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Thallium, Dissolved	D	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Vanadium	T	7440-62-2	1.7	1	0.3	ug/L			
Vanadium, Dissolved	D	7440-62-2	0.57	1	0.3	ug/L	J	J	
Zinc	T	7440-66-6	98	20	2.8	ug/L	B		
Zinc, Dissolved	D	7440-66-6	9.6	20	2.8	ug/L	J B	UB	B

Analysis Method 2320B-2011

Sample Name A73_100316 **Matrix Type:** Water

Lab Sample Name: 680-130495-1 **Sample Date:** 10/3/2016 12:15:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Alkalinity	T	STL00171	16	5	5	mg/L			

Sample Name AR7-2_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-11 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Alkalinity	T	STL00171	90	5	5	mg/L			

Sample Name AR7-2_100416D **Matrix Type:** Water

Lab Sample Name: 680-130495-12 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Alkalinity	T	STL00171	89	5	5	mg/L			

Sample Name FW-012_100216 **Matrix Type:** Water

Lab Sample Name: 680-130495-15 **Sample Date:** 10/2/2016 3:00:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Alkalinity	T	STL00171	120	5	5	mg/L			

Sample Name A75D_100316 **Matrix Type:** Water

Lab Sample Name: 680-130495-3 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Alkalinity	T	STL00171	17	5	5	mg/L			

Analysis Method 2320B-2011

Sample Name A75D_100316D **Matrix Type:** Water

Lab Sample Name: 680-130495-4 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Alkalinity	T	STL00171	16	5	5	mg/L			

Sample Name AR19-3_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-7 **Sample Date:** 10/4/2016 8:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Alkalinity	T	STL00171	82	5	5	mg/L			

Sample Name AR2-7a_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-9 **Sample Date:** 10/4/2016 12:10:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Alkalinity	T	STL00171	99	5	5	mg/L			

Analysis Method 2340B-2011

Sample Name A73_100316 **Matrix Type:** Water

Lab Sample Name: 680-130495-1 **Sample Date:** 10/3/2016 12:15:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	160	3.3	3.3	mg/L			

Sample Name AR7-2_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-11 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	200	3.3	3.3	mg/L			

Sample Name AR7-2_100416D **Matrix Type:** Water

Lab Sample Name: 680-130495-12 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	200	3.3	3.3	mg/L			

Sample Name FW-012_100216 **Matrix Type:** Water

Lab Sample Name: 680-130495-15 **Sample Date:** 10/2/2016 3:00:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	270	3.3	3.3	mg/L			

Analysis Method 2340B-2011

Sample Name A75D_100316 **Matrix Type:** Water

Lab Sample Name: 680-130495-3 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	120	3.3	3.3	mg/L			

Sample Name A75D_100316D **Matrix Type:** Water

Lab Sample Name: 680-130495-4 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	110	3.3	3.3	mg/L			

Sample Name AR19-3_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-7 **Sample Date:** 10/4/2016 8:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	190	3.3	3.3	mg/L			

Sample Name AR2-7a_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-9 **Sample Date:** 10/4/2016 12:10:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	200	3.3	3.3	mg/L			

Analysis Method 245.1

Sample Name A73_100316 **Matrix Type:** Water

Lab Sample Name: 680-130495-1 **Sample Date:** 10/3/2016 12:15:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	
Mercury, Dissolved	D	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Sample Name AR7-2_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-11 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	
Mercury, Dissolved	D	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Analysis Method 245.1

Sample Name AR7-2_100416D **Matrix Type:** Water

Lab Sample Name: 680-130495-12 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	
Mercury, Dissolved	D	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Sample Name FW-012_100216 **Matrix Type:** Water

Lab Sample Name: 680-130495-15 **Sample Date:** 10/2/2016 3:00:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	
Mercury, Dissolved	D	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Sample Name A75D_100316 **Matrix Type:** Water

Lab Sample Name: 680-130495-3 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	
Mercury, Dissolved	D	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Sample Name A75D_100316D **Matrix Type:** Water

Lab Sample Name: 680-130495-4 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	
Mercury, Dissolved	D	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Sample Name AR19-3_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-7 **Sample Date:** 10/4/2016 8:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	
Mercury, Dissolved	D	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Sample Name AR2-7a_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-9 **Sample Date:** 10/4/2016 12:10:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	
Mercury, Dissolved	D	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Analysis Method 2540 D-2011

Sample Name A73_100316 **Matrix Type:** Water

Lab Sample Name: 680-130495-1 **Sample Date:** 10/3/2016 12:15:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	T	STL00161	14	1.7	1.7	mg/L			

Sample Name AR7-2_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-11 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	T	STL00161	15	1	1	mg/L			

Sample Name AR7-2_100416D **Matrix Type:** Water

Lab Sample Name: 680-130495-12 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	T	STL00161	17	1	1	mg/L			

Sample Name FW-012_100216 **Matrix Type:** Water

Lab Sample Name: 680-130495-15 **Sample Date:** 10/2/2016 3:00:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	T	STL00161	29	4	4	mg/L			

Sample Name A75D_100316 **Matrix Type:** Water

Lab Sample Name: 680-130495-3 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	T	STL00161	15	1	1	mg/L		J	F1

Sample Name A75D_100316D **Matrix Type:** Water

Lab Sample Name: 680-130495-4 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	T	STL00161	6.5	1	1	mg/L		J	F1

Analysis Method 2540 D-2011

Sample Name AR19-3_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-7 **Sample Date:** 10/4/2016 8:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	T	STL00161	11	1	1	mg/L			

Sample Name AR2-7a_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-9 **Sample Date:** 10/4/2016 12:10:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	T	STL00161	34	1	1	mg/L			

Analysis Method 5310 B-2011

Sample Name A73_100316 **Matrix Type:** Water

Lab Sample Name: 680-130495-1 **Sample Date:** 10/3/2016 12:15:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Dissolved Organic Carbon	T	7440-44-0	1.4	1	0.5	mg/L			
Total Organic Carbon	T	7440-44-0	0.9	1	0.5	mg/L	J	J	

Sample Name AR7-2_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-11 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Dissolved Organic Carbon	T	7440-44-0	2	1	0.5	mg/L		J	F1
Total Organic Carbon	T	7440-44-0	1	1	0.5	mg/L			

Sample Name AR7-2_100416D **Matrix Type:** Water

Lab Sample Name: 680-130495-12 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Dissolved Organic Carbon	T	7440-44-0	1.4	1	0.5	mg/L		J	F1
Total Organic Carbon	T	7440-44-0	1.1	1	0.5	mg/L			

Analysis Method 5310 B-2011

Sample Name FW-012_100216 **Matrix Type:** Water

Lab Sample Name: 680-130495-15 **Sample Date:** 10/2/2016 3:00:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Dissolved Organic Carbon	T	7440-44-0	2.3	1	0.5	mg/L			
Total Organic Carbon	T	7440-44-0	1.6	1	0.5	mg/L			

Sample Name A75D_100316 **Matrix Type:** Water

Lab Sample Name: 680-130495-3 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Dissolved Organic Carbon	T	7440-44-0	1.6	1	0.5	mg/L			
Total Organic Carbon	T	7440-44-0	0.99	1	0.5	mg/L	J	J	

Sample Name A75D_100316D **Matrix Type:** Water

Lab Sample Name: 680-130495-4 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Dissolved Organic Carbon	T	7440-44-0	1.4	1	0.5	mg/L			
Total Organic Carbon	T	7440-44-0	0.97	1	0.5	mg/L	J	J	

Sample Name AR19-3_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-7 **Sample Date:** 10/4/2016 8:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Dissolved Organic Carbon	T	7440-44-0	1.5	1	0.5	mg/L			
Total Organic Carbon	T	7440-44-0	1	1	0.5	mg/L			

Sample Name AR2-7a_100416 **Matrix Type:** Water

Lab Sample Name: 680-130495-9 **Sample Date:** 10/4/2016 12:10:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Dissolved Organic Carbon	T	7440-44-0	1.9	1	0.5	mg/L			
Total Organic Carbon	T	7440-44-0	1.3	1	0.5	mg/L			

Analysis Method 6010C

Sample Name AR2-7a_SED_100416 **Matrix Type:** Solid

Lab Sample Name: 680-130495-10 **Sample Date:** 10/4/2016 12:10:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	12000	28	4.3	mg/Kg	B		
Calcium	T	7440-70-2	18000	70	7.2	mg/Kg	B		
Iron	T	7439-89-6	19000	28	7.4	mg/Kg	B		
Magnesium	T	7439-95-4	2800	70	12	mg/Kg			
Potassium	T	7440-09-7	1800	140	3.5	mg/Kg			
Sodium	T	7440-23-5	100	280	67	mg/Kg	J	J	

Sample Name AR7-2_SED_100416 **Matrix Type:** Solid

Lab Sample Name: 680-130495-13 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	14000	30	4.7	mg/Kg	B		
Calcium	T	7440-70-2	19000	75	7.8	mg/Kg	B		
Iron	T	7439-89-6	20000	30	8	mg/Kg	B		
Magnesium	T	7439-95-4	3200	75	13	mg/Kg			
Potassium	T	7440-09-7	2100	150	3.8	mg/Kg			
Sodium	T	7440-23-5	100	300	72	mg/Kg	J	J	

Sample Name AR7-2_SED_100416D **Matrix Type:** Solid

Lab Sample Name: 680-130495-14 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	13000	25	3.9	mg/Kg	B		
Calcium	T	7440-70-2	14000	63	6.5	mg/Kg	B		
Iron	T	7439-89-6	18000	25	6.6	mg/Kg	B		
Magnesium	T	7439-95-4	2900	63	11	mg/Kg			
Potassium	T	7440-09-7	1900	130	3.1	mg/Kg			
Sodium	T	7440-23-5	100	250	60	mg/Kg	J	J	

Sample Name FW-012_SED_100216 **Matrix Type:** Solid

Lab Sample Name: 680-130495-16 **Sample Date:** 10/2/2016 3:00:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	16000	33	5.1	mg/Kg	B		
Calcium	T	7440-70-2	23000	82	8.5	mg/Kg	B		
Iron	T	7439-89-6	21000	33	8.7	mg/Kg	B		
Magnesium	T	7439-95-4	4600	82	15	mg/Kg			
Potassium	T	7440-09-7	2600	160	4.1	mg/Kg			

Analysis Method 6010C

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Sodium	T	7440-23-5	410	330	79	mg/Kg			

Sample Name A73_SED_100316 **Matrix Type:** Solid

Lab Sample Name: 680-130495-2 **Sample Date:** 10/3/2016 12:15:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	31000	55	8.6	mg/Kg	B		
Calcium	T	7440-70-2	3900	140	14	mg/Kg	B		
Iron	T	7439-89-6	65000	55	15	mg/Kg	B		
Magnesium	T	7439-95-4	3100	140	25	mg/Kg			
Potassium	T	7440-09-7	1600	280	6.9	mg/Kg			
Sodium	T	7440-23-5	130	550	130	mg/Kg	U	U	

Sample Name A75D_SED_100316 **Matrix Type:** Solid

Lab Sample Name: 680-130495-5 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	8500	21	3.3	mg/Kg	B		
Calcium	T	7440-70-2	2100	54	5.6	mg/Kg	B		
Iron	T	7439-89-6	27000	21	5.7	mg/Kg	B		
Magnesium	T	7439-95-4	4300	54	9.5	mg/Kg			
Potassium	T	7440-09-7	980	110	2.7	mg/Kg			
Sodium	T	7440-23-5	51	210	51	mg/Kg	U	U	

Sample Name A75D_SED_100316D **Matrix Type:** Solid

Lab Sample Name: 680-130495-6 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	9000	23	3.5	mg/Kg	B		
Calcium	T	7440-70-2	2400	57	5.9	mg/Kg	B		
Iron	T	7439-89-6	31000	23	6	mg/Kg	B		
Magnesium	T	7439-95-4	4700	57	10	mg/Kg			
Potassium	T	7440-09-7	1100	110	2.8	mg/Kg			
Sodium	T	7440-23-5	54	230	54	mg/Kg	U	U	

Sample Name AR19-3_SED_100416 **Matrix Type:** Solid

Lab Sample Name: 680-130495-8 **Sample Date:** 10/4/2016 8:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	9900	23	3.6	mg/Kg	B		
Calcium	T	7440-70-2	23000	58	6	mg/Kg	B		
Iron	T	7439-89-6	19000	23	6.1	mg/Kg	B		
Magnesium	T	7439-95-4	6100	58	10	mg/Kg			

Analysis Method 6010C

Potassium	T	7440-09-7	1700	120	2.9	mg/Kg			
Sodium	T	7440-23-5	110	230	56	mg/Kg	J	J	

Analysis Method 6020A

Sample Name AR2-7a_SED_100416 **Matrix Type:** Solid

Lab Sample Name: 680-130495-10 **Sample Date:** 10/4/2016 12:10:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.14	1.4	0.14	mg/Kg	U	U	
Arsenic	T	7440-38-2	4.6	0.42	0.14	mg/Kg			
Barium	T	7440-39-3	430	0.7	0.084	mg/Kg	B		
Beryllium	T	7440-41-7	0.92	0.07	0.021	mg/Kg			
Cadmium	T	7440-43-9	0.85	0.07	0.021	mg/Kg			
Chromium	T	7440-47-3	4.8	1.4	0.15	mg/Kg			
Cobalt	T	7440-48-4	8.3	0.07	0.014	mg/Kg		J+	Q
Copper	T	7440-50-8	27	0.7	0.18	mg/Kg			
Lead	T	7439-92-1	29	0.28	0.07	mg/Kg			
Manganese	T	7439-96-5	840	1.4	0.17	mg/Kg	B		
Molybdenum	T	7439-98-7	0.74	1.4	0.11	mg/Kg	J	J	
Nickel	T	7440-02-0	7.9	1.4	0.36	mg/Kg			
Selenium	T	7782-49-2	4.8	0.7	0.14	mg/Kg			
Silver	T	7440-22-4	0.19	0.14	0.014	mg/Kg			
Thallium	T	7440-28-0	0.2	0.14	0.07	mg/Kg			
Vanadium	T	7440-62-2	27	0.7	0.38	mg/Kg			
Zinc	T	7440-66-6	220	2.8	1.4	mg/Kg			

Sample Name AR7-2_SED_100416 **Matrix Type:** Solid

Lab Sample Name: 680-130495-13 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.15	1.5	0.15	mg/Kg	U	U	
Arsenic	T	7440-38-2	5.3	0.45	0.15	mg/Kg			
Barium	T	7440-39-3	500	0.75	0.091	mg/Kg	B		
Beryllium	T	7440-41-7	0.96	0.075	0.023	mg/Kg			
Cadmium	T	7440-43-9	0.9	0.075	0.023	mg/Kg			
Chromium	T	7440-47-3	5.4	1.5	0.17	mg/Kg			
Cobalt	T	7440-48-4	9.8	0.075	0.015	mg/Kg		J+	Q
Copper	T	7440-50-8	33	0.75	0.2	mg/Kg			
Lead	T	7439-92-1	29	0.3	0.075	mg/Kg			
Manganese	T	7439-96-5	880	1.5	0.18	mg/Kg	B		
Molybdenum	T	7439-98-7	0.88	1.5	0.12	mg/Kg	J	J	
Nickel	T	7440-02-0	9.5	1.5	0.39	mg/Kg			
Selenium	T	7782-49-2	5.4	0.75	0.15	mg/Kg			

Analysis Method 6020A

Silver	T	7440-22-4	0.2	0.15	0.015	mg/Kg				
Thallium	T	7440-28-0	0.22	0.15	0.075	mg/Kg				
Vanadium	T	7440-62-2	29	0.75	0.41	mg/Kg				
Zinc	T	7440-66-6	220	3	1.5	mg/Kg				

Sample Name AR7-2_SED_100416D **Matrix Type:** Solid

Lab Sample Name: 680-130495-14 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.13	1.3	0.13	mg/Kg	U	U	
Arsenic	T	7440-38-2	4.5	0.38	0.13	mg/Kg			
Barium	T	7440-39-3	410	0.63	0.075	mg/Kg	B		
Beryllium	T	7440-41-7	0.89	0.063	0.019	mg/Kg			
Cadmium	T	7440-43-9	0.58	0.063	0.019	mg/Kg			
Chromium	T	7440-47-3	5.2	1.3	0.14	mg/Kg			
Cobalt	T	7440-48-4	8.5	0.063	0.013	mg/Kg		J+	Q
Copper	T	7440-50-8	28	0.63	0.16	mg/Kg			
Lead	T	7439-92-1	23	0.25	0.063	mg/Kg			
Manganese	T	7439-96-5	680	1.3	0.15	mg/Kg	B		
Molybdenum	T	7439-98-7	0.72	1.3	0.1	mg/Kg	J	J	
Nickel	T	7440-02-0	8.5	1.3	0.33	mg/Kg			
Selenium	T	7782-49-2	5	0.63	0.13	mg/Kg			
Silver	T	7440-22-4	0.17	0.13	0.013	mg/Kg			
Thallium	T	7440-28-0	0.2	0.13	0.063	mg/Kg			
Vanadium	T	7440-62-2	26	0.63	0.34	mg/Kg			
Zinc	T	7440-66-6	150	2.5	1.3	mg/Kg			

Sample Name FW-012_SED_100216 **Matrix Type:** Solid

Lab Sample Name: 680-130495-16 **Sample Date:** 10/2/2016 3:00:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.16	1.6	0.16	mg/Kg	U	U	
Arsenic	T	7440-38-2	6.8	0.49	0.16	mg/Kg			
Barium	T	7440-39-3	280	0.82	0.098	mg/Kg	B		
Beryllium	T	7440-41-7	1.2	0.082	0.025	mg/Kg			
Cadmium	T	7440-43-9	0.81	0.082	0.025	mg/Kg			
Chromium	T	7440-47-3	11	1.6	0.18	mg/Kg			
Cobalt	T	7440-48-4	10	0.082	0.016	mg/Kg		J+	Q
Copper	T	7440-50-8	29	0.82	0.21	mg/Kg			
Lead	T	7439-92-1	33	0.33	0.082	mg/Kg			
Manganese	T	7439-96-5	1000	1.6	0.2	mg/Kg	B		
Molybdenum	T	7439-98-7	0.72	1.6	0.13	mg/Kg	J	J	
Nickel	T	7440-02-0	13	1.6	0.43	mg/Kg			

Analysis Method 6020A

Selenium	T	7782-49-2	6.4	0.82	0.16	mg/Kg			
Silver	T	7440-22-4	0.22	0.16	0.016	mg/Kg			
Thallium	T	7440-28-0	0.28	0.16	0.082	mg/Kg			
Vanadium	T	7440-62-2	30	0.82	0.44	mg/Kg			
Zinc	T	7440-66-6	210	3.3	1.6	mg/Kg			

Sample Name A73_SED_100316 **Matrix Type:** Solid

Lab Sample Name: 680-130495-2 **Sample Date:** 10/3/2016 12:15:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	3.3	2.8	0.28	mg/Kg			
Arsenic	T	7440-38-2	51	0.83	0.28	mg/Kg			
Barium	T	7440-39-3	360	1.4	0.17	mg/Kg	B F2		
Beryllium	T	7440-41-7	4.2	0.14	0.042	mg/Kg			
Cadmium	T	7440-43-9	13	0.14	0.042	mg/Kg			
Chromium	T	7440-47-3	6.3	2.8	0.3	mg/Kg			
Cobalt	T	7440-48-4	52	0.14	0.028	mg/Kg	F1	J+	Q
Copper	T	7440-50-8	470	1.4	0.36	mg/Kg			
Lead	T	7439-92-1	610	0.55	0.14	mg/Kg			
Manganese	T	7439-96-5	10000	28	3.3	mg/Kg	B		
Molybdenum	T	7439-98-7	13	2.8	0.22	mg/Kg			
Nickel	T	7440-02-0	26	2.8	0.72	mg/Kg			
Selenium	T	7782-49-2	16	1.4	0.28	mg/Kg			
Silver	T	7440-22-4	2.8	0.28	0.028	mg/Kg			
Thallium	T	7440-28-0	0.57	0.28	0.14	mg/Kg			
Vanadium	T	7440-62-2	34	1.4	0.75	mg/Kg			
Zinc	T	7440-66-6	3600	55	28	mg/Kg			

Sample Name A75D_SED_100316 **Matrix Type:** Solid

Lab Sample Name: 680-130495-5 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	1.3	1.1	0.11	mg/Kg			
Arsenic	T	7440-38-2	16	0.32	0.11	mg/Kg			
Barium	T	7440-39-3	120	0.54	0.064	mg/Kg	B		
Beryllium	T	7440-41-7	0.79	0.054	0.016	mg/Kg			
Cadmium	T	7440-43-9	2.7	0.054	0.016	mg/Kg			
Chromium	T	7440-47-3	5	1.1	0.12	mg/Kg		J	F1
Cobalt	T	7440-48-4	15	0.054	0.011	mg/Kg		J+	Q
Copper	T	7440-50-8	98	0.54	0.14	mg/Kg			
Lead	T	7439-92-1	270	0.21	0.054	mg/Kg			
Manganese	T	7439-96-5	2500	11	1.3	mg/Kg	B		
Molybdenum	T	7439-98-7	3.8	1.1	0.086	mg/Kg			

Analysis Method 6020A

Nickel	T	7440-02-0	8.4	1.1	0.28	mg/Kg			
Selenium	T	7782-49-2	4.3	0.54	0.11	mg/Kg			
Silver	T	7440-22-4	0.76	0.11	0.011	mg/Kg			
Thallium	T	7440-28-0	0.21	0.11	0.054	mg/Kg			
Vanadium	T	7440-62-2	23	0.54	0.29	mg/Kg			
Zinc	T	7440-66-6	760	21	11	mg/Kg			

Sample Name A75D_SED_100316D **Matrix Type:** Solid

Lab Sample Name: 680-130495-6 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	2	1.1	0.11	mg/Kg			
Arsenic	T	7440-38-2	20	0.34	0.11	mg/Kg			
Barium	T	7440-39-3	140	0.57	0.068	mg/Kg	B		
Beryllium	T	7440-41-7	0.88	0.057	0.017	mg/Kg			
Cadmium	T	7440-43-9	3	0.057	0.017	mg/Kg			
Chromium	T	7440-47-3	11	1.1	0.12	mg/Kg		J	F1
Cobalt	T	7440-48-4	17	0.057	0.011	mg/Kg		J+	Q
Copper	T	7440-50-8	140	0.57	0.15	mg/Kg			
Lead	T	7439-92-1	340	0.23	0.057	mg/Kg			
Manganese	T	7439-96-5	2900	11	1.4	mg/Kg	B		
Molybdenum	T	7439-98-7	4.4	1.1	0.091	mg/Kg			
Nickel	T	7440-02-0	9.2	1.1	0.29	mg/Kg			
Selenium	T	7782-49-2	4	0.57	0.11	mg/Kg			
Silver	T	7440-22-4	0.87	0.11	0.011	mg/Kg			
Thallium	T	7440-28-0	0.23	0.11	0.057	mg/Kg			
Vanadium	T	7440-62-2	27	0.57	0.31	mg/Kg			
Zinc	T	7440-66-6	840	23	11	mg/Kg			

Sample Name AR19-3_SED_100416 **Matrix Type:** Solid

Lab Sample Name: 680-130495-8 **Sample Date:** 10/4/2016 8:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.14	1.2	0.12	mg/Kg	J	J	
Arsenic	T	7440-38-2	8.2	0.35	0.12	mg/Kg			
Barium	T	7440-39-3	210	0.58	0.07	mg/Kg	B		
Beryllium	T	7440-41-7	0.81	0.058	0.017	mg/Kg			
Cadmium	T	7440-43-9	1.2	0.058	0.017	mg/Kg			
Chromium	T	7440-47-3	7.6	1.2	0.13	mg/Kg			
Cobalt	T	7440-48-4	8.5	0.058	0.012	mg/Kg		J+	Q
Copper	T	7440-50-8	30	0.58	0.15	mg/Kg			
Lead	T	7439-92-1	60	0.23	0.058	mg/Kg			
Manganese	T	7439-96-5	630	1.2	0.14	mg/Kg	B		

Analysis Method 6020A

Molybdenum	T	7439-98-7	1.7	1.2	0.093	mg/Kg				
Nickel	T	7440-02-0	14	1.2	0.3	mg/Kg				
Selenium	T	7782-49-2	4.9	0.58	0.12	mg/Kg				
Silver	T	7440-22-4	0.3	0.12	0.012	mg/Kg				
Thallium	T	7440-28-0	0.19	0.12	0.058	mg/Kg				
Vanadium	T	7440-62-2	25	0.58	0.31	mg/Kg				
Zinc	T	7440-66-6	220	2.3	1.2	mg/Kg				

Analysis Method 7471A

Sample Name AR2-7a_SED_100416 **Matrix Type:** Solid

Lab Sample Name: 680-130495-10 **Sample Date:** 10/4/2016 12:10:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.023	0.028	0.011	mg/Kg	J	J	

Sample Name AR7-2_SED_100416 **Matrix Type:** Solid

Lab Sample Name: 680-130495-13 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.031	0.032	0.013	mg/Kg	J	J	

Sample Name AR7-2_SED_100416D **Matrix Type:** Solid

Lab Sample Name: 680-130495-14 **Sample Date:** 10/4/2016 10:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.027	0.025	0.01	mg/Kg			

Sample Name FW-012_SED_100216 **Matrix Type:** Solid

Lab Sample Name: 680-130495-16 **Sample Date:** 10/2/2016 3:00:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.023	0.032	0.013	mg/Kg	J	J	

Sample Name A73_SED_100316 **Matrix Type:** Solid

Lab Sample Name: 680-130495-2 **Sample Date:** 10/3/2016 12:15:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.05	0.063	0.025	mg/Kg	J	J	

Sample Name A75D_SED_100316 **Matrix Type:** Solid

Lab Sample Name: 680-130495-5 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes

Analysis Method 7471A

Mercury	T	7439-97-6	0.015	0.022	0.009	mg/Kg	J	J

Sample Name A75D_SED_100316D **Matrix Type:** Solid

Lab Sample Name: 680-130495-6 **Sample Date:** 10/3/2016 9:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.023	0.022	0.0088	mg/Kg			

Sample Name AR19-3_SED_100416 **Matrix Type:** Solid

Lab Sample Name: 680-130495-8 **Sample Date:** 10/4/2016 8:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.037	0.025	0.01	mg/Kg			